



Fleshy Mistletoe (*Amyema mirabilis*)
host to butterflies: Satin Azure (*Ogyris
amaryllis*); Black Gezebel (*Delias nigrina*);
Scarlet Gezebel (*Delias argenthona*)

METAMORPHOSIS

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PLANNING AND ORGANIZING COMMITTEE 2015

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PLANNING AND ORGANIZATION MEETINGS

A quarterly meeting is scheduled in order to plan club activities and the magazine.
See BOIC Programme.

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Membership fees are \$30 for individuals, schools and organizations.

AIMS OF THE ORGANIZATION

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, native bees, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

MAGAZINE DEADLINES

If you wish to submit an item for publication the following deadlines apply:

March issue – February 1st June issue – May 1st

September issue – August 1st December issue – November 1st

All articles should be submitted directly to the Editor daphne.bowden1@bigpond.com

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COVER PAINTING

Fleshy Mistletoe (*Amyema mirabilis*) host to butterflies: Satin Azure (*Ogyris amaryllis*):
Black Jezebel (*Delias nigrina*); Scarlet Jezebel (*Delias argenthona*) - Painting by Lois Hughes



FROM THE PRESIDENT

I would like to thank the members of the executive who unanimously elected me to the position of president. The older members of the club will remember me from my time on the executive as the project officer.

The great news for the club is that very shortly the Mistletoe book will be on its way to the printer. There is more about this in the magazine.

Thank you to those who have written articles for the magazine. Keep them coming. I encourage others to also record their observations.

I would like to remind members that our annual general meeting will be held in April. If you would like to contribute to the running of the club give some thought to standing for one of the positions.

Happy reading
Frank Jordan

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The history of the mistletoe book – Ross Kendall

The concept of a publication co-authored by John and I was formed in May 2006. Earlier that month, just after I assumed the role of club president on May 3rd, John visited us and I took him to see a magnificent specimen of a mistletoe growing on a Bottlebrush tree on a footpath not far from my home. To our dismay, we found that the branch holding the mistletoe had been neatly removed. John mentioned the fact that mistletoes had been removed from Allara Place Park on Bulimba Creek and that perhaps we (the Club) should contact the Brisbane City Council (BCC) and question their actions.

At that time we discussed the production a small brochure about mistletoes and I photographed the first images from some of John's colour slides on May 16th. John and Glenn Leiper had previously written an article for Wildlife Australia Magazine entitled "A drink from mine host: the Magic and Mystery of Australian Mistletoes" and we contacted the publishers to gain their permission to use this text as an introduction. They agreed and sent us an electronic copy of the file.

On June 24th, 2006, on behalf of the club and with John's assistance, I wrote to the BCC Chief Executive Officer, Jude Munro, outlining our concerns over the removal of mistletoes. The results were positive with further correspondence and discussions such that it was agreed that we produce a small brochure that could be issued to BCC staff and others. Council would be willing to provide financial assistance.

The concept soon developed from a brochure to a small field guide and by August 2007, I was able to write to a staff member of the BCC enclosing a draft copy of "A Field Guide to the Mistletoes of the Brisbane Region" covering 20 species of mistletoes which was 90% complete and awaiting a few more images. The full-colour A5 booklet of 24 pages was to be printed on satin finish. She replied by email with the response that "*We would like to examine the possibility of BCC sponsorship. Please provide an update on the progress and when you would consider going to print*". After lengthy delays in the booklet's development and several subsequent phone calls, BCC interest in the matter lapsed.

It became obvious to us that the quality and range of some of the 38 images, many taken from John and Glenn's colour slides, left much to be desired. We also realised that the details in the book could be greatly enhanced and the geographic range of coverage widened.

Thus began an expansion of the project. John began to write a preface to the book, expand the introduction, write more detailed descriptions of each species and add notes to these where required. I began a quest to acquire a comprehensive set of images and to "educate" myself about mistletoes. The page size was increased to B5 and two pages were allocated for each species. The title of the book became "A Field



Guide to the Mistletoes of Southeastern Queensland and Northern New South Wales”. More species of mistletoes were added. By 2009, John was working on keys to identification and completed the key to the family Viscaceae in June of that year. A key to family Loranthaceae proved a tougher nut to crack. He acquired a computer and a digital camera. A lengthy list of references and a glossary were added.

More species were added and the range widened. In early October 2011, I found and photographed a species of mistletoe that I did not recognise which was growing on a Coolibah near Quilpie. John confirmed its identity on my return and said that it was also found near Dalby - another addition. At that time, I printed off a list of all the known species of mistletoe in Australia and studied maps of their distribution. It was clear that those we had included in our “range” often occurred elsewhere and that another half dozen species would make for a complete coverage of all known mistletoes in sub-tropical Queensland, New South Wales and Victoria. We set about filling the gaps with the aid of published material and the donation of difficult to obtain images. Maps would be helpful.

Meanwhile, John worked on the key to Loranthaceae and found that he really needed to complete detailed species descriptions and notes for identifying mistletoes before continuing. These were largely finalised by August 2014. It had taken five years but, eventually, a compromise key-like structure for helping to identify species in the family Loranthaceae was devised.

Along the way diagrams were added and, with the aid of my grandson, I designed distribution maps for each species of mistletoe. There were gaps in the layout of the book, which led to the evolution of insertion of images and notes about some butterfly and moth species that use mistletoes as their host.

In early 2014 Lois created two excellent paintings, which are now the basis of the front and back covers.

By September 2014, I was able to finally combine all the various elements and had the first draft copies printed for critical review. It took six months of editing before a second draft was printed in May 2015. After further editing, copies of the third draft were printed in mid-September 2015. Valuable input was received from reviewers. Another (final) species of mistletoe and two taxonomic indices were added. I expanded the book index. Final editing and the addition of more images were completed by the end of January 2016. The job of printing will be undertaken at the end of February.

With his writing and his fieldwork, John has contributed countless hours and travelled thousands of kilometres. I have managed to make a smaller contribution in field trips but more than a thousand hours of computing time has been spent on preparation of text, images, figures and maps and bringing them together in the final design using various software packages. MS Word has its limitations and in July 2015, I transferred the book’s contents piece by piece into Adobe InDesign format.



The project has had more than a nine and a half year development with sometimes lengthy delays in its progress but the delays have often been beneficial in that more or better quality images were found, new information gained, good advice obtained from various experts and “laymen” while text and layout were refined. Without the support of quite a number of people, it would not have been possible to produce a book of high quality. These contributors are acknowledged in the book.

Now titled “The Mistletoes of Subtropical Queensland, New South Wales and Victoria” the book is 140 pages long and deals with all the 46 known species (plus 5 subspecies) of mistletoes in the area of its coverage. There are 228 colour images, 44 black-line illustrations and 54 maps. We hope that it will be a valuable reference book and field guide as well as being of interest to the general reader.

NEW HOST PLANT RECORD

New Host Plant for Caper White, *Belenois java* (Linnaeus 1768)

Lepidoptera: Pieridae: Pierinae – Graham J. McDonald

Introduction: This new host plant record for the Caper White began with a caravan journey from the Gold Coast to Western Australia in September – October 2015. The primary goal was to photograph Western Australian flora in the main spring flowering season. When my wife and I camped out at Karajini National Park (Dales Gorge Campground), from 19 September to 21 September, we noticed some black and white butterflies actively flying around a small sandalwood tree, *Santalum spicatum* (Santalaceae).

Upon closer inspection of the tree, I observed and photographed most stages of the life cycle in a single day. There were eggs oviposited in clusters on the skin of the drupes (fruits), early instar larvae, late instar larvae, a prepupa, pupae and adult butterflies, see Figs 1 to 7.



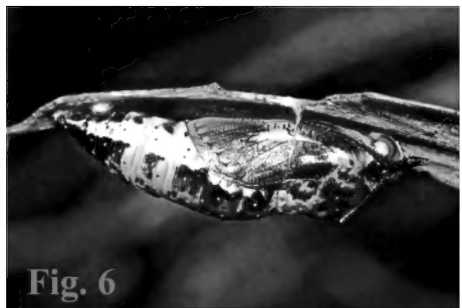


Fig. 1 *Belenois java* eggs on *Santalum spicatum* fruit

Fig. 2 *B. java* eggs close-up

Fig. 3 *B. java* early instar larva on *S. spicatum*

Fig. 4 *B. java* late instar larva on *S. spicatum*

Fig. 5 *B. java* prepupa

Fig. 6 *B. java* pupa

Fig. 7 *B. java* adult male

This discovery was surprising considering all previously recorded host plants are in

the family Capparaceae (capers), including several *Capparis* spp. and *Apophyllum anomalum* (Warrior Bush).

The GPS location was 22°28'8.34"S, 118°33'2.78"E.

Caper White: *Belenois java* (Linnaeus 1768). This species belongs to a genus of open country species common in more arid parts of Australia, Asia and Africa. *Belenois java* is widespread in Australia, present over most of the land mass except for the western parts of South Australia and the southern part of Western Australia. It is a rare vagrant in Tasmania.

Two subspecies are recognised. *Belenois java teutonia* is the common Australian form which is the form observed at this location. *Belenois java peristhene* is a Pacific Island form, sometimes seen on the east coast of Australia as a migrant (Braby, 2000).



The Host Plants: All recorded host plants for this butterfly belong to the family Capparaceae and include:

Apophyllum anomalum (Broom Bush, Warrior Bush). This species is commonly used in semi-arid parts of western New South Wales and Queensland. This plant is dioecious, with male flowers on one plant and female flowers on a separate plant. I have a photographic record of both male and female plants taken 50 kilometres east of Cobar, New South Wales, see Figs 8 and 9. This plant has broom-like almost leafless

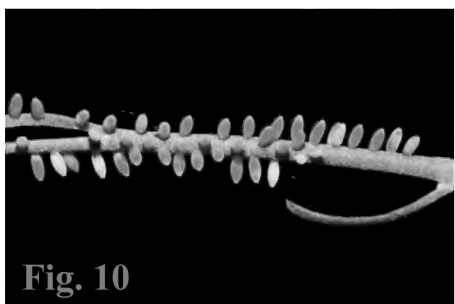
stems and grows in a number of soil types, preferring sandy soils in arid areas. Caper White eggs and larvae were observed on the female plant, see Figs 10 and 11.

Fig. 8 *Apophyllum anomalum* male flowers

Fig. 9 *Apophyllum anomalum* female flowers

Fig. 10 *B. java* eggs on *Apophyllum anomalum*

Fig. 11 *B. java* larva on *Apophyllum anomalum*



- *Capparis arborea* (Scrub Caperberry). Mostly found in eastern Queensland and New South Wales in closed forest.



- *Capparis canescens* (Wild Orange). It is found in coastal and sub-coastal Queensland.
- *Capparis lasiantha* (Nipan, Split Jack). It is found in most areas of Queensland and northern Australia but not in the extreme south-east corner of Queensland.
- *Capparis mitchellii* (Native Pomegranate). It is found in the arid zone of Australia including the Pilbara.
- *Capparis sarmentosa* (Scrambling Caper). This scandent shrub is found in wetter forests of south-eastern Queensland, usually near the margins.
- *Capparis sepiaria*. It grows across northern Australia.
- *Capparis umbonata*. It is mostly found across northern Australia.

Note that there are over 20 species of *Capparis* recorded in Queensland. Some of these may also prove to be host plants.

9 species have been recorded in Western Australia (Paczkowska & Chapman 2000).

New Host Plant: *Santalum spicatum* (Sandalwood) is a hemiparasitic shrub or tree which grows to 4 metres. It has stiff spreading branchlets. The leaves are opposite, lanceolate-elliptic, 20–70 mm x 3–15 mm, grey-green, obtuse and leathery.

Flowers are in short panicles with four red and green triangular tepals, 1–2 mm long and 4 short stamens around a central disc.

Fruit are globular drupes, 15–25 mm diameter, brown to green and not succulent. The stone is mottled brown, dull and fairly smooth with fine pits.

Its distribution is mainly concentrated in the central and south-western areas of Western Australia, but not in the extreme south-western region, and in parts of South Australia. A small outlier occurs in the Pilbara region of Western Australia where the host plant is located.

The preferred soil types in which it is most often found are red, sandy soils amongst rocks, red lateritic soils with a surface of ironstone gibbers and in soils derived from banded ironstone.

The associated plant species that were growing in the area included *Eucalyptus leucophloia* (Snappy Gum), *E. socialis* (Red Mallee), *Grevillea wickhamii* (Holly Grevillea), *Hakea lorea* (Corkwood), *Jacksonia* sp., *Acacia adoxa*, *Acacia* spp. and *Ptilotus obovatus* (Cottonbush).

Family Santalaceae The plants in this family can be hemiparasitic or non-parasitic. A hemiparasitic plant is partly dependent on other plants, from which they take nutrients, usually via the root system or stem vascular system. They can also make some of their own food as they possess chlorophyll and so can photosynthesise, e.g. mistletoes. They can be trees, shrubs or herbs. The fruits are indehiscent, nut-like or drupaceous. The seeds have copious endosperm.





- *Santalum acuminatum* (R. Br.) (Quandong, Desert Quandong). The fruit of this tree has sweet edible flesh that is much valued for making pies, jellies and jams, see Fig 12.

- *Santalum lanceolatum* (R.Br.) (Plumwood, Northern Sandalwood). It is sometimes substituted for *Santalum spicatum* in its uses, see Fig 13.

- *Santalum murrayanum* (T. Mitch.) (Bitter Quandong). This tree has bitter tasting fruit and the seeds are dispersed by emus, see Fig 14.

- *Santalum obtusifolium* (A sandalwood). Shrub to 2 metres with black, purple, ovoid fruit to 10 mm. Found in sub-coastal south-eastern Queensland and northern New South Wales.

- *Santalum spicatum* (R. Br.) (Sandalwood). This is the classic

sandalwood harvested for the making of oil used in perfumes, soaps, incense and folk medicine. Harvesting is now restricted in the wild. The larvae of the Caper White were observed feeding only on the *Santalum spicatum*. They do not appear to use the other four *Santalum* species.

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All photographs Graham J. McDonald

ITEMS OF INTEREST

Artisans of the Gum Trees – *Densey Clyne*

Through my kitchen window this morning, I watched a Wanderer butterfly laying her eggs on a plant of Red Milkweed (*Asclepias curassavica*), a food plant of her caterpillars. The plants come up everywhere in my cottage garden and this very day I was about to prune the rather straggly clump down to the ground. Now the attractively banded caterpillars will do it for me. They are welcome. Good to have them on staff.



Saunders Case Moth
(*Metura elongatus*)

Gardener I may be, but I am a serious champion of caterpillars. The attractive colour patterns of many moth larvae, in particular, are not generally appreciated, perhaps because they are so good at hiding their light under a bushel. Or a leaf or stem. But it is not so much the beauty of many caterpillars that attracts me (though I marvel at it) as their often surprising ways of manipulating the environment to meet their specific needs, usually in the interests of security.

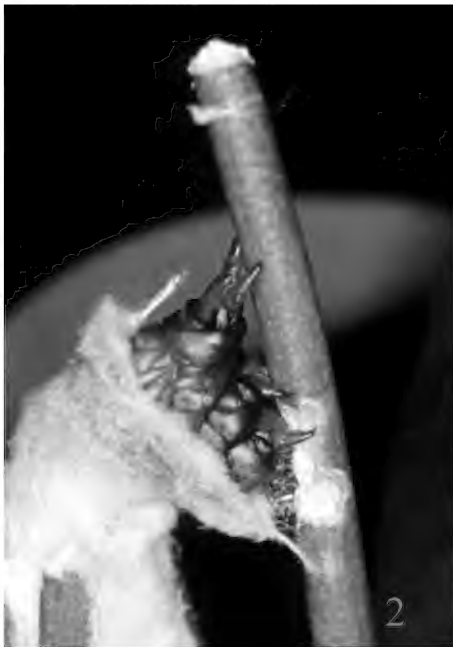
For me, the doyens of these insect artisans are the larvae of case moths, particularly that of Saunders Case Moth (*Metura elongatus*). Well known and quite common in the Eastern States, the large, elongate, light brown tubular case covered with little sticks is usually seen hanging in a eucalypt or sometimes a garden tree. You can't miss it.



So how does the caterpillar make that impressive case? It has to be a strong shelter because a case moth female stays in it for life, first as a caterpillar then as a pupa, emerging from the pupal shell as a flightless moth, and laying her eggs inside. Obviously, the basic structure is woven of silk and what copious quantities she must produce to make it too tough for most birds to tackle. But I wondered about the sticks. They are obviously cut to size being all about the same length and thickness, so some finesse must be required in their selection and preparation.

Over the years, I have had several case moths on my kitchen bench happily feeding on fresh gum leaves. One of these was a well-grown caterpillar with a large case that clearly needed a new stick. Here was my opportunity to find out her technique. So I watched and waited and, to my delight, one day she fastened her case towards the end of a stem and I was able to record the precise steps of her procedure from start to finish, as follows:

1. Her case already fixed with silk to a suitable stem the caterpillar pokes her head and thorax out of the opening at the top, reaches forward and snips off the leafy end of the stem, which is discarded.
2. She measures (how?) the appropriate distance back from the newly cut end of the stem, and, her case securely attached behind this, cuts the stick free.



3. Attaching the new stick temporarily to the top of the case the caterpillar withdraws out of sight inside. There she starts cutting a hole in the thick felt-like



fabric with her mandibles. This takes some time but finally her head emerges and she finishes the job in full view.

4. The hole completed, the caterpillar reaches up through it and detaches the stick from its temporary tether at the top of the case.



5. She brings the stick into place, manipulating it with her feet, to align it vertically with the hole.

6. Finally, retreating out of sight, she weaves the stick tightly into place. Job done.



The whole process can take up to an hour and a half. It seems to me a remarkable series of actions for a simple caterpillar to carry out. But it should never be assumed that any insect is simple; after all, they've had millions of years to work it all out.



While the Saunders Case Moth female remains incarcerated the mature male does actually escape from his case. But the question is, how do they mate? I get a partial answer to this one morning when I find a male moth fluttering crazily about my kitchen floor. He has emerged overnight from a case on the kitchen bench, my first male sighting. I admire his unexpectedly beautiful coat of silky black and gold tufts and his black wings.

I take his furry body gently in my fingers and put him back on his discarded pupal shell but he becomes agitated, jerking about and rapidly rotating his abdomen. Then I notice to my astonishment that his abdomen is telescopic - he has extended it to nearly twice its original length!

So this must be the answer to the question of meeting and mating. Attracted by her scent to a gravid female the male settles at the bottom of her case, inserts his long, narrow abdomen into the lower opening and by touch alone

connects with the female in her dark chamber. A blind date indeed!

Alas, there are no suitable females available on my kitchen bench for this male so I put him outside to try his luck elsewhere.

I have noticed at the base of some cases a single longer-than-usual stick. Could this be attached there by a hopeful female as a landing platform for her suitor? I would not be surprised.

Photos Densey Clyne



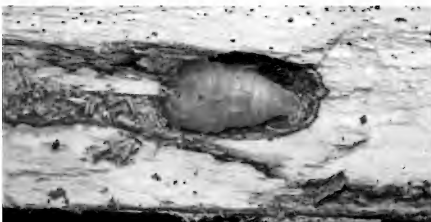
Golden Green Stag Beetle (*Lamprima latreillii*) --- A picture story – Hongming Kan



Last summer, I wrote a short article on my experience of capturing the Brown Stag Beetle (*Rhyssonotus nebulosus*) in Brisbane and it was published in the club magazine (Issue No. 76 March 2015). One of the goals of last summer's trip was to find Golden Green Stag Beetles (*Lamprima latreillii*). Unfortunately, to my great disappointment, I failed to capture any of them. Nor did I see any of their larvae or pupae. However, based on information gleaned from the Internet, I knew they did occur in the Brisbane area. So I jumped to the conclusion that they might be threatened or endangered due to the land clearing and dry weather.

This summer, the hope of getting my hands on Golden Green Stag Beetles was rekindled after consulting with a fellow club member Richard Zietek, who is an expert on beetles. I was told the larvae of Golden Green Stag Beetles prefer certain types of tree, Casuarinas and Acacias being their favourite hosts. The key to finding them is to find the decaying logs of the right trees. The next day, I went to a local bush area with a single-minded focus on finding fallen logs of those trees. Not long after trekking along the track, with a stroke of luck, I spotted *Casuarina* logs lying in the shadow of other standing trees. The logs were so soft that they could be easily broken apart by hand without much effort, which was a promising sign that they were thoroughly rotten and were likely to be inhabited by beetle larvae.

The inside of the log was teeming with life with termites, black ants and brown stag beetle larvae and pupae living side by side. I was seized by ecstasy when I saw a female Golden Green Stag Beetle pupa inside the log! Finally, years of relentless search came to successful fruition!





Two days later, a beautiful red female golden stag beetle emerged from the pupa.

There was only one Golden Green Stag Beetle larva in the first log but in another log nearby, I found four female larvae. The interesting thing was that in the second log, there were no Brown Stag Beetles inside as they seemed to be a dominant species and had appeared in almost all rotten logs I had dug before.



The Golden Green Stag Beetle is a colourful species. The females come in two colours---red and blue.

In total, I found six larvae on that lucky day. It almost made my day except that no male Golden Green Stag Beetle was found. But it was already a very good start for me.

I returned to the same area the next day, venturing off track deep into the bush. After hours of searching, I finally came across a male pupa inside a big rotten Casuarina tree.



A few days later, a beautiful male Golden Green Stag Beetle emerged.



Larvae of Golden Green Stag Beetles were also found inside the rotten logs. The body of a larva tapers toward the end, which is a unique feature among all *Lamprima* species and can be used to tell *lamprima* larvae apart from other stag beetle larvae.

I had no experience of breeding beetles up to that point but it suddenly dawned on me that if I took the whole log home and emulated their natural living conditions in captivity, there was a very good chance the larvae could develop into adults.



So I took a number of larvae and a few rotten logs home and put them in a big container. According to my observations, the host logs always lay in shady and cool places where the sun could not directly shine on them meaning humidity could be preserved. In order to approximate the larvae's natural living conditions, I put the container in my study room and sprayed water on the logs on a daily basis. One month later, when my curiosity got the better of me, I broke the logs open to check the progress of the larvae. Most had pupated and only one of them had died. I was pretty happy that my first trial of raising beetle larvae went well.

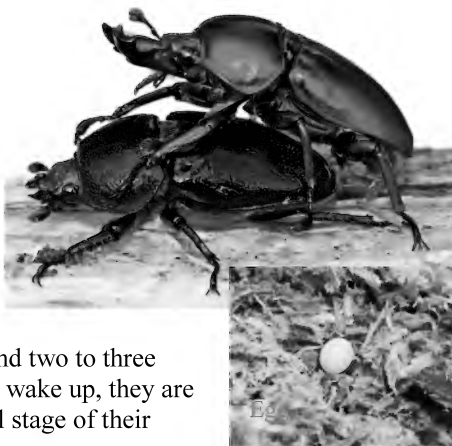


My intuition, honed through days of rolling logs, reached the point where I could easily tell whether a log contained Golden Green Stag Beetles or not just by looking at it, so finding them became easier for me in the following days.

Another interesting thing I discovered is that often times, the dead bodies of male Golden Stag Beetles appeared in the same log where live female adults were found. Initially, I surmised maybe the males died soon after mating with females until I witnessed firsthand that some females killed males after mating with them. Not all females enjoy the killing but it seems the smaller and weaker males are prone to the atrocities of their spouses. I suspect this is because, in order to lay healthy eggs, the females need more nutrition and animal protein and the best way to get them is from their unsuspecting (and maybe willing) partners.



Unlike most butterflies, which emerge on reaching maturity, beetles may remain dormant after emerging, for a period of time ranging from a few days to a year or two. During this inactive period, they stay in their pupa cells completely motionless, as if they are dead. Sometimes even their limbs become stiff like a dried specimen and they don't respond to outside stimulations. One day I found one such Golden Stag Beetle among several newly emerged ones. I thought it was dead and left it on the foam board to pin but was distracted by other things. A few hours later when I returned to it, I was surprised to see the beetle's legs were slowly moving.



On average, Golden Green Stag Beetles spend two to three weeks "sleeping" after emerging. After they wake up, they are ready for the most important task in the final stage of their lives --- reproduction.

Contrary to what I thought last summer, they are not endangered or threatened here in Brisbane but are indeed not easy to come by. I do not want this beautiful creature to disappear from my local area so I have released most of the mated females near the original places where I found them.



“New” species observation for Bundanoon, NSW – Alan Hyman

On Thursday 15th January 2015, I recorded a ‘new’ species (as far as my personal observations go) of a butterfly for Bundanoon, bringing my total to 57 for the local district. Whilst driving into town from the north around a sweeping bend, I observed what appeared to be a ‘spotted’ butterfly lying on the road between the double white lines. I drove another 50 metres where I could execute a ‘U’ turn safely near a rail bridge, drove back past the insect to do another ‘U’ turn at a country lane and returned to stop beside the butterfly. With hazard lights flashing and ensuring there were no vehicles behind, I leapt out, swept the unfortunate insect onto the passenger seat, and jumped back into the car. (An impatient driver then passed me on the ‘wrong’ side!) The battered specimen turned out to be a Blue Tiger (*Tirumala hamata*) and confirmed a couple of suspected sightings years ago (2003?) of a large ‘greyish’ butterfly seen from a distance but never identified. A bushcare acquaintance told me ‘Alan, you are the only person we know who would do that – referring to the car incident.’ (The sighting last year probably coincided with the appearance of large numbers of Blue Tigers in S.E.Q. about this date.) To further reinforce my observation, a friend from Kiama (a coastal town about 50 km to the east of Bundanoon) reported seeing this species – plus I observed another flying at Jubilee Park near Glebe (inner Sydney city harbor area) on the 21st January 2015 – as well as a Lemon Migrant (*Catopsilia pomona*). It’s pleasing to have these welcome visitors!

Life history notes on the Speckled Line-blue, *Catopyrops florinda halys* (Butler, 1877) Lepidoptera: Lycaenidae – Wesley Jenkinson



This small, beautifully coloured butterfly species is known from two subspecies within Queensland. The southern subspecies are known as *Catopyrops florinda halys* and is encountered along much of eastern Queensland south from Byfield (I.F.B. Common, in Braby, 2000) southwards to Stanwell Park New South Wales (Waterhouse, in Braby 2000). It occurs in a wide variety of habitats including subtropical rainforest margins, dry vine forest and in suburban gardens in south-eastern Queensland. It is frequently common

where the host plants are established.

Adult flight is very rapid, particularly the males which are strongly territorial and swiftly chase other males and small lycaenids entering their territory. Basking adults typically settle on the outer foliage of small shrubs and trees with their wings open towards the sun with the head slightly angled downwards. While feeding, the wings generally remain closed, but occasionally the hind wings are very slightly opened and alternated up and down with the movement of the two tail appendages simulating



antennae of a false head – thus confusing would be predators. The males do not appear to hilltop.

Within Queensland, male uppersides show little variation while females show significant seasonal variation in the extent of the metallic blue on the upperside. Winter females have pale blue scaling extending across most of the wings. Summer females often have much reduced, darker blue metallic scaling across the wings, being almost absent in some individuals. Intermediate specimens also occur. The underside markings vary in size and intensity in both sexes.

Wingspans for the pictured adult specimens are males 22mm and females 23mm.



Images left to right: male, female, male underside, female underside (winter specimens)



Images left to right: male, female, male underside, female underside (summer specimens)

Catopyrops florinda halys (Speckled Line-blue)

The following host plant families are listed by various authors listed in Braby 2000, Caesalpiniaceae, Sapindaceae, Ulmaceae and Urticaceae.

Ovipositing females typically fly slowly throughout the host tree branches and settle on fresh leaf buds or flower buds in a sheltered position. Larger leaves are also selected where they walk below the leaf laying a single egg near the midrib or a scarred section of leaf. The wings remain closed while ovipositing occurs. I have observed females egg laying between mid-morning and mid-afternoon in hot or warm sunny conditions at various times of the year.



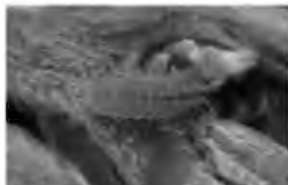
In February 2009, an egg was collected and raised through to an adult in captivity on a favoured host plant Native Mulberry (*Pipturus argenteus*). Another commonly used native host plant in this region is Poison Peach (*Trema tomentosa*). This freshly laid, very tiny egg was pale greenish-white, mandarin shaped, approximately 0.6 mm wide x

0.4 mm high, covered in small triangular shaped pitting with small rounded raised projections.



The larva consumed most of the eggshell after emergence. The highly camouflaged small larva rested below fresh new shoots next to the leaf midrib. It ate the lower epidermis of the leaf causing the leaf to appear skeletonised, leaving small black patches on the young fresh leaves. The larger larval instars also chewed through the leaves creating holes. It fed during daylight in captivity. Larvae are occasionally attended by ants. On one occasion I observed a larva being attended by a Rattle Ant (*Polyrhachis* sp.).

This larva attained a length of 12mm and completed 5 instars as pictured.



1st instar larva



2nd instar larva



3rd instar larva



4th instar larva



5th instar larva dorsal view



In captivity, the pupa, measuring 7mm in length, was located below a leaf of the host plant. It was attached with silk by the cremaster and a central girdle.

Egg duration was 4 days, larval duration was 21 days while pupal duration was 10 days.



Within the new boundary of the Scenic Rim Regional Shire south of Brisbane, I have records of the adults during all months, being less numerous from August to November. It appears there may be three or more generations in this region.



Reference:

Braby, M.F., 2000. *Butterflies of Australia – Their Identification, Biology and Distribution*.
vol 2. CSIRO Publishing, Melbourne.

PART 2 - CREATING A BUTTERFLY FRIENDLY GARDEN FROM SCRATCH – Continuing Graham McDonald's 4 part series of "Gardening for Butterflies" which was originally printed beginning with issue (#17) June 2000 of the BOIC Newsletter.

If your piece of ground is undeveloped or just composed of weed species, then you are in a position to create a butterfly haven.

Where do you begin? Consider the needs of the insects you wish to attract and maintain. What are their basic requirements?

- (a) Larval host plants in sufficient quantity and of sufficient size to support caterpillars.
- (b) Sheltered and sunny, wind free areas for butterflies to alight on leaves to sun themselves.
- (c) Nectar plants of the correct species to suit a variety of butterflies with different lengths of proboscis. Most of these flowers tend to be tubular in shape although some butterflies use the nectar of *Eucalyptus* spp. which have wide and shallow flowers.
- (d) Sufficient flight paths and spaces between plant groups in order that butterflies may fly to their preferred plants.
- (e) Some muddy and wet areas for butterflies to sip mineralised water.
- (f) A few untidy and wild grassy areas containing native grass species, especially clumping *Themeda* and *Poa*, *Lomandra* spp., *Dianellas* and *Gahnia*s which are never mown or sprayed with chemicals.

When creating a new garden, it would be a mistake to plant only butterfly host plants, as the result would probably look very scrappy and unattractive. A better plan would be to plant a variety of indigenous native species and include say 30% - 40% of butterfly host plants within the plantings. In this way, 60% - 70% of plants would form the framework of the garden. They would not become chewed and those chewed plants would not dominate.

Divide the garden up into a number of sections - this can be planned on paper so that each section contains plants with similar basic requirements. The idea here is for low maintenance. The sections may include:

- * a subtropical rainforest area
 - * a dry rainforest area
- * a dry sclerophyll area
 - * a heathland area
 - * a wetland area
- * a herb and grass area.



If your land is flat and small, you may opt for only one or two of these plant community areas. If your terrain is larger and has varied topography you will be able to accommodate all the plant communities you wish.

Each plant community type should be separated by 2 - 3 metre wide paths. Communities of taller plants should ideally be located to the south of those containing smaller sun-loving species such as sedges and heathy shrubs. Wetland areas need to be located in the lowest part of the land or near a dam / creek or catch runoff from the house or higher parts of the land.

Each of these plant communities will be dealt with in subsequent newsletters but the basic principles of good design and preparation are common to all.

Soil and Site Preparation

1. Bare and Grassy Areas - Spray entire area with glyphosate (mix according to directions on label). Leave 10 days and respray missed areas. Alternatively, cover the entire area with overlapping newspaper (minimum 10 pages thick) and mulch with 10 cm of organic mulch. Leave 2 - 3 months before planting in it.

2. Bare Soil - If the soil is subsoil clay, then cover with 15 cm of imported soil, plant and mulch. If the soil is topsoil, then plant and mulch with 15 cm of organic mulch (or vice versa). It is a good idea to test the pH of the soil and add lime or dolomite before mulching to raise the pH to 6.5.

If the area is flat, then soil should be formed into raised beds separated by drainage channels (with or without pipes) before mulching. The beds need to be raised only 15 cm - 20 cm.

3. Scattered trees on site - Remove any 'feral' trees, e.g. Camphor Laurel and *Corymbia torelliana*. Leave local trees and local clumping grass species. Kill grass between trees by mulching or use glyphosate and then mulch. Plant understorey shrubs, rushes, grasses and herbs which suit that area and are of local indigenous origin.

You are now ready to plant.

BOOK REVIEWS

The Mistletoes of Subtropical Queensland, New South Wales and Victoria



John T. Moss and Ross Kendall

Mistletoes of Subtropical Queensland, New South Wales and Victoria – Reviewed by

Glenn Leiper

After an almost ten year labour of love, many thousands of kilometers in research and field visits, and numerous drafts, authors John Moss and Ross Kendall have delivered the eagerly anticipated "The Mistletoes of Subtropical Queensland, New South Wales and Victoria".

And what a book it is ... meticulous in detail, colourful in presentation, and easily readable in text and layout.



It ticks all the boxes.

- Coverage of all species in the region, from Rockhampton to Victoria ... tick!
- Easy species identification ... tick!
- Lots of supporting information for each species, including the butterflies and moths using them as hosts ... tick!
- Extensive general mistletoe information ... tick!
- Lots of supporting anecdotes and interesting information ... tick!
- Excellent clear photos ... tick!
- Distribution maps for each species ... tick!
- An excellent cover that stands out (paintings by Lois Hughes) ... tick!
- Clear uncluttered line drawings ... tick!

Additionally, it's well designed, effectively organised, and the text is clear and concise, yet appropriately descriptive where needed. But what would you expect from an author who is a retired medical practitioner, has published many entomological and botanical papers and articles, has delivered countless talks to community groups, and has a passion for a wide range of natural history areas (John), and an author who has guided the growth of the Butterfly and Other Invertebrates Club (Inc) for nine years as President, has developed an incredible knowledge of butterfly breeding through his hobby/business post-"retirement", has developed a passion for photography, and is a retired secondary school teacher (Ross)?

At 140 pages in B5 size, it's comfortable to carry as a field guide, yet contains extensive and comprehensive coverage of the 51 mistletoe species (including subspecies) and closely related plants. Not a fraction of a page has been wasted, with the authors maximizing all available space, packing it with either photos, drawings or text - a feature I greatly admire! Nothing is more frustrating than opening a new book and finding a large percentage of the book has blank space! The authors have endeavoured to ensure that not a chance is missed to deliver concise information and tremendous supporting colour photos at every opportunity. (There are nearly 230 colour photos by the way.)

The authors have provided an interesting and comprehensive coverage of mistletoes and their ecology, including their structure, their diversity and adaptations, all available information on their hosting of butterfly and moth larva, and also some revealing explanatory information on the oft-repeated fallacy of mistletoes killing their host trees, and much more. They explain the differences between the two main mistletoe families, Loranthaceae and Viscaceae, and this provides the scaffolding for the book's organization, so that closely related species are clustered together in the book, as well as similar species being referred to in each relevant species' description. Each species' coverage includes a distribution map, a detailed description of its attachment method to the host, its growth habit, its foliage, flowers and fruit, its



habitat, and any butterflies and moths that use it as a host, any other interesting information, and photos that in most cases includes the plant itself, its foliage, flowers and fruit. There is a glossary, taxonomic lists of all mistletoes in the book as well as butterflies and moths mentioned, and a detailed reference list. Many references are also made throughout the book to scientific papers and references, as well as relevant discoveries and observations by people in the field. All of this information provides not only a detailed coverage of the subject but also an interesting personalized account that reveals a deep passion for mistletoes by the authors.

This is a book that is a must for those interested in botany and entomology, or for anyone with an interest in learning more about the east coast's biodiversity, and of course for anyone wanting to identify those much maligned but fascinating mistletoes. I highly recommend it. The ten year wait was worth it!

Ed. This book is available from BOIC for a member's price of \$25 (RRP \$30) plus P&H.

All About Butterflies of Australia by Garry Sankowsky –

Reviewed by *Frank Jordan*



The beauty of butterflies is what draws people to admire them, and indeed this book is full of pictures of many of the most attractive ones. However, there is much more to this book than just pretty pictures.

Garry is the most experienced butterfly enthusiast in Australia and he shares the knowledge he has accumulated over many decades. Not only does he anticipate the things people want to know about butterflies, but also lets us know the things we need to know to fully understand the world of butterflies.

Publishers will often pressure authors of butterfly books to exclude photos of caterpillars as they think this will make the book more attractive. Garry has liberally included photos of caterpillars throughout the book, even in some cases showing all the different stages that the caterpillar goes through. And when, for example, the reader comes to the photo of the Black-and-white Tiger (Swamp Tiger) or the Leafwing they will realize that caterpillars also have their own beauty.

Various aspects of the butterfly lifecycle are well covered in the early part of the book. Also covered are some of the predators of butterflies and the attempts of butterflies to avoid being eaten. I particularly appreciated the photo of the egg of the tachinid fly that parasitises many butterfly caterpillars.

There is a section on setting up a butterfly garden and a list of some basic butterfly plants. This is enough to get the reader started on what can become a very large enterprise.



Garry has a few pages about the damage that inappropriate fire burning regimes can have on butterfly populations. His statement that “A butterfly is not protected unless its habitat is protected.” seems obvious to me, but I know that most politicians ignore it.

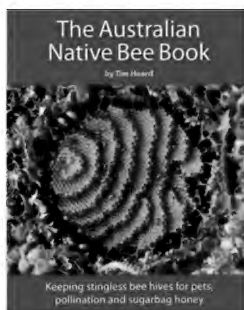
There is a discussion about the difference between butterflies and moths at the beginning and some examples of moths at the end of the book. He includes photos of two beautiful exotic moths on pages 6 and 7 to make a point about Gondwanaland. The main part of the book gives examples of the many different butterflies we have in Australia. Where space permits, there are bits of interesting information about the butterflies. As a bonus, photos of the full lifecycle of the endangered Fritillary butterfly are included since Garry is one of the few people to have seen this butterfly in the wild.

This is the book you need to read to take you from an interest in butterflies to an enthusiasm for butterflies. At 168 pages, it is a bit small to go into much detail on such a vast subject. However, once you’ve started with this book you will be well equipped to continue your voyage of discovery.

Ed. This book is available from BOIC for a member’s price of \$25 (RRP \$29.95) plus P&H.

The Australian Native Bee Book by Tim Heard – Reviewed by

Frank Jordan



This book is about the stingless bees of Australia and there are several things that make this book special.

Firstly, there is the depth of experience about native bees that has been accessed by the author. Many people have been entranced by our stingless bees and this has resulted in a wealth of amateur observation and experimentation. A perusal of the acknowledgement page reveals a multitude of names and these are just a few of the people who could be named.

Secondly, the author has been running workshops on native bees for many years. He has a feel for what people are interested in finding out, especially the practical side of things.

Thirdly, the author is also a scientist who has done a lot of research in this area. Some of the information about our bees is hidden away in obscure journals but the author has the skills to ferret it out for his readers.

The book is well laid out and has a logical structure making it easier to just find the parts you may be interested in. There are many photos, each one illustrating some point being made in the text, many being beautiful and some are just astonishing.



The book is divided into three main sections – Understanding bees, Keeping hives of stingless bees and using Bees for pollination.

The first section is comprehensive. It starts with what is a bee? It puts our stingless bees into their geographical context and compares them to the European bee. It considers their evolutionary history. There is even a chapter written with Dr Anne Dollin (Australian Native Bee Research Centre) incorporating the latest research about all of our native stingless species.

The second section is about beekeeping. I have no doubt that this is what will be of most interest to readers. It contains much practical information and the photos here are particularly useful. The author does point out that he mainly deals with versions of the OATH hive which is the most widespread hive design. There are many other designs but realistically it would require another book to cover them.

Research on pollination of crops by native bees is still in its infancy. The material presented in this section details what has been learnt so far. The author was a pioneer in this research. If the European honey bee goes into serious decline we will have an important backup for some of our crops.

This is an excellent book. Buy it. Read it. And join the community of bee-lovers.

Ed. This book is available from BOIC for a member's price of \$30 (RRP \$35) plus P&H.

***The Naming of Australia's Dragonflies* by Ian Endersby and Heinrich**

Flidner. Publisher: Busybird publishing, Eltham, Victoria. (2015). ISBN: 9781925260625 (paperback). 278pp. (No retail price; as softcover-in octavo format or pdf – contact endersby@mira.net) – Reviewed by *Kelvyn L. Dunn*



The Naming of Australia's Dragonflies is not a book about the dragonfly fauna of the continent, nor is it a field guide. The title clearly indicates the work's speciality; it deals principally with the etymologies of the names of the 544 taxa of dragonfly known to occur within Australia, a fauna that currently contains (or has contained) 121 genera, 7 subgenera, 336 species, 18 subspecies, and 62 synonyms or homonyms. To provide some

background, the project has foundations in Ian Endersby's three papers published in 2012 on the etymologies of Victorian taxa and of those taxa named by prominent entities. This new work, however, expands the 70% coverage of the Australian dragonfly fauna tackled in those preliminary pieces to the nationwide extent and, importantly, includes all that specialist knowledge in one place. Endersby unashamedly clarifies too that his collaboration with Heinrich Flidner arose from



philological corrections (among others) to those earlier research papers. The primary author wrote, “Heinrich has invested so much intellectual effort into this project that it is only right and proper that he should be recognised as a co-author” (p. viii). This collaborative piece, now of broader scope and in a book format, will undoubtedly reach a wider audience in the natural sciences due to increased availability, and will appeal to those with an interest in taxonomic etymology – the study of the origin and derivation of words used in naming species. Although aimed at classicists (sadly rare among today’s entomologists), the book will draw readership too from those who wish to learn about the varied lives of the taxonomists involved. This human component effectively enlarges the audience the book caters for; and it is always interesting to read about the lives of others in entomology. One’s curiosity will be piqued whilst delving into those fact-filled biographical sections.

In the Preface, the primary author (Endersby) explains his fascination with words and their meanings, and relates how he has juxtaposed that literary curiosity with his long-standing enthusiasm for the study of the Odonata (Dragonflies and damselflies). To achieve this scholarly work, he and his co-author have examined all original descriptions, whether published in Latin, French or German (most are not in English), and deduced the etymologies from Greek and Latin roots, where the origins are less than clear in the original descriptions. Indeed, not all workers who named species were informative enough to explain why they selected a specific epithet for a particular species, so this has left room for some detective work. To that analysis, the first author admits that speculation has been a scientific tool as part of the process, where other approaches failed. He openly admits too, that those descriptions in German and Latin posed an intellectual challenge, one that required assistance by acknowledged specialists with aptitude in those languages to enable clear interpretations.

The Introduction (pp.1-26) is a varied section. It discusses the historic foundations for the naming of the Australian species and presents a cumulative chart from the years 1750 to beyond 2000. The nature of the slope and evident inflexions enabled the authors to divide the timeline into three proposed eras (1758-1845, 1845(reiterated)-1906, and 1907-2013). Discussion of these eras includes coverage of the key contributors to each. The third era is described as the Era of Australian Odonatology, but one might not assume that that era is closed (as the terminal year of 2013 might imply); undoubtedly, more species particularly cryptic ones are yet to be recognised in Australia, and in future decades named and described. The introductory section also explains where the names of the dragonflies have (or may have) their inspirations. As in the Lepidoptera (the Order I am familiar with), these are based on the names of people, places, the insects’ physical appearance, their colouration, patterns, sizes, beauty (even wonderment), and of course, similarities to other earlier named taxa. A very few have been named based on their behaviour, evolution, field abundance or frequency (a trend I would like to see change). Still others are in the basket of



uncertainty (where their taxonomic positions are presently unclear) and the Latin descriptor, *Incertae sedis* (used rather loosely in this work), categorises those select taxa where the authors were unable to deduce a meaning for the names selected. The 112 eponyms are categorised by percentage (with the names of odonatologists comprising the largest category at 27%), and 42 toponyms are detailed, with most species having been named after the first place of capture. In addition, tables display the dragonfly taxonomists and the species names they selected, arrayed according to several categories of persons (namely, Odonatologists, collectors, figures from antiquity, other entomologists, relatives, friends and colleagues, other naturalists and unclassified eponyms).

Towards its end, the Introduction explains the methodology of research and the investigative approaches to etymology and the unravelling of the complexities of historical grammars. In process, this section outlines issues with determining gender alignments of the base and root names, in order to comply with the conventions and rulings of the International Code of Zoological Nomenclature, and other complexities of that Code's requirements for contemporary nomenclatural standardisations and procedures. Technological changes may become influential here; one remains curious as to whether the 'digital divide' will influence these taxonomic rulings in the future. It is conceivable that as databased knowledge expands across decades, the need for unified spellings will increasingly be emphasised to enable scientific information on species to be more accessible by internet search engines seeking scholarly reports. Perhaps we will see the *retention of the original spellings* of species' names become the norm, rather than perceived, as at this time, as forms of quirkiness, eccentricity or even author-defiance (potentially rooted in Australian larrikinism?) The mandatory ruling that requires the modification of declinable adjectives to facilitate any gender alignment, wherever applicable, may become historic in order to expedite digital simplicity and lead to what some perceive as taxonomic common sense.

The biographical accounts (pp. 27-87), including black and white portraits, provide detailed historical coverage of over 40 personages who have contributed to the naming process. Many of these historic workers will be familiar to broader insect taxonomists and enthusiasts alike, as most have named insect species outside of the Odonata. Names such as Macleay, Drury and Kirby drew immediate attention from the butterfly perspective, and these were read first in order to 'sense the book'. Several workers biographed are still living and others have become famously recognised across centuries. Many readers will find something of charm in these short accounts. A dilemma faced by K. J. Morton of Edinburgh, Scotland, the lay worker who named *Chorismagrion risi* from northern Queensland, deserves a moment's reflection. It is written, that "Although offered the post of manager (at the British Linen Bank), he declined this honour to have more leisure time for the pursuit of entomological studies." (p. 70). Granted that some workers pursued their fondness for dragonflies as professional entomologists, usually associated with universities, museums or other research institutes, others, like Morton (1858-1940), developed



expertise and recognition through recreational activity (albeit, seemingly not without some lifestyle curtailment at times). Nevertheless, these founders of dragonfly naming have ensured an enduring contribution – a legacy of dedicated published and unpublished work built upon today.

The bulk of the book, from page 95 onwards, focusses on taxon etymology – the naming of the fauna. It alphabetically lists genus and species epithets with one or more explanations offered for each, where determined. For each name (including synonyms), the language of origin is specified, the gender where determined or applicable is given, and any relevant details of grammar (which include whether names are standard adjectives, declinable adjectives, nouns in genitive case, nouns in apposition, among others) are provided to assist with nomenclatural changes across time. Coverage includes the authority (or authorities) for each name (including the genus to which each was earliest assigned), the year of publication and the page number(s) in the sources concerned (each listed in the References). The References contain over 270 historic and contemporary sources, and this section (pp. 237-262) stands as more than just a list of the publications consulted as part of fact reinforcement. The references, in this context, are arguably part of the body text itself because the sources cement into taxonomy as a formal component of species names and the names of genera and, indelibly for the higher groupings too. Five Appendices then conclude the book; these deal with the number and levels of taxa named by each author (and joint authors), the categorisations of root names of genera and species, the genders of generic names, and the English and Latin equivalents of the Greek alphabet.

The text has been meticulously proof read, no quick task given the complexity of some sections, and the main body is succinct and clearly written, save some minor concerns. There are very few typographic errors (although one would unlikely detect these in the spellings of scientific names that one is largely unfamiliar with); there is a mistakenly spelled State name under the account for Moulds (see p. 82), as one example. The biographies are chronological according to the date of publication of the species relevant to Australia, rather than alphabetical by surname, or chronological from the year of the worker's birth. To navigate this section, the sequential listing of the author-biographies presented on p.27 will enable the reader to seek out those of interest, given that there is no Index of any form at the rear of the book. In addition, one or more of the author-biographies of the European specialists refer the attendance at a 'Gymnasium' (e.g. T. de Charpentier, p.40), reflecting the German usage of that term, and which is clarified (albeit later) in the biography of F.M. Brauer (on p. 49). Essentially, the European 'Gymnasium' equates to a Secondary School (often an advanced or academic one, rather like a 'Grammar School'). That definition is broader than the word's usage in English today, where it specifies a place of physical education. In the expanded Polish and Greek usage, 'Gymnasium' may include middle schooling or even young adult learning centres, and this system may also



apply to some biographies; essentially, the European usage has its origins in the Ancient Greek educational system.

A couple of other technical issues are worth discussing, before closing. Those with a limited knowledge of European languages may find this additional information insightful. The term *Ypsilon*, is the German name of the Greek *Upsilon* (defined on p. 277), which is the 20th letter of the Greek alphabet. The Greek name *Upsilon* can be used to refer to the Latin letter **Y** as well as the Greek letter it intends. However, the name *Ypsilon* is not included in Appendix 5, which seemed confusing on my first reading when I met with this term, because **Y** is not in the Greek alphabet – the Greek language has only 24 letters, and the name is Germanic. Hence, it is a common transliteration into German of a Greek letter (as stated on p. 278). Another issue pertains to name changes of taxonomists. It seemed, on prima facie evidence, that the information on the Latinisation of the name of Carl von Linné was confused (or at least confusing to me), based on alternative versions I had read in the past. One might reasonably suppose that von Linné would be the original Swedish spelling of Linnaeus, perhaps the version used prior to his academic career or publishing history, but a simple explanation is not always the likeliest one. Concerning this historical change of name, and when that event happened, the primary author responded with fuller information. This provided some clarification, improved understanding, and confirmed too, that a measure of uncertainty still exists. Its reiteration below, as an appendix, is for the benefit of others as the matter is not straightforward.

The tremendous amount of time spent compiling this useful piece was no doubt an invigorating experience for both authors, one each would feel proud of as personal accomplishments in their entomological pursuits. I congratulate them for their dedication to the task and for their exacting attention to detail, which together has created a learned, reliable and welcomed source of historical data for future taxonomists. Indeed, *The Naming of Australia's Dragonflies* provides a solid format for other specialists to build upon and utilise more broadly; those with passionate and dedicated interests may do well to produce companion works in etymology for other Orders of insects – the moths and butterflies of Victoria might each be a suitable continuation of this task.

Appendix: Ian Endersby's reply (11th Jan. 2016) read: "The internet has a lot of confusion concerning Linnaeus but I think this article portrays it accurately:

'Linnaeus' name comes in different variants: "Carl Linnaeus," "Carolus Linnaeus," and "Carl von Linné," and sometimes just "Carl Linné." There is often confusion about his real (Swedish) name, as opposed to the Latinized form "Carolus Linnaeus" that he used most when he published his scientific works (in Latin).

In Linnaeus' time, most Swedes had no surnames. Linnaeus' grandfather was named Ingemar Bengtsson (son of Bengt), according to Scandinavian



tradition. Linnaeus' father was known as Nils Ingemarsson (son of Ingemar). Only for registration purposes, for example when matriculating at a university, one needed a surname. In the academic world, Latin was the language of choice, so when Linnaeus' father went to the University of Lund, he coined himself a Latin surname: Linnaeus, referring to a large linden (lime) tree on the family property Linnagård (*linn* being a now obsolete variant of Swedish *lind*, the linden). Nils Ingemarsson gave his son the name Carl. So the Swedish name of the boy was Carl Linnaeus (Stearn 1992). When Carl Linnaeus enrolled as a student at the University of Lund, he was registered as "Carolus Linnaeus." This Latinized form was the name he used when he published his works in Latin. After he was ennobled in 1761 (Stearn 1957), he took the name Carl von Linné. 'Linné' is a shortened version of 'Linnaeus' and 'von' is added to signify his being considered nobility.

When referring to or citing the author Linnaeus, it is appropriate to use "Carl Linnaeus," "Carolus Linnaeus," or just "Linnaeus." "Carl von Linné" seems to be less suitable, especially for the works he published before 1762. On the title page of the second edition of *Species plantarum* (1762), the author's name is still printed as 'Carolus Linnaeus' (or rather the genitive form 'Caroli Linnaei'), but from then on, his name is quite consistently printed as 'Carolus a Linne' or 'Carl von Linné.' Stafleu uses 'Carl Linnaeus' as the author's name for all his works. The adjective of his name is usually "Linnaean," but the prestigious Linnean Society of London has a journal *The Linnean*, and awards the Linnean Medal."

(Full article available online at
http://www.newworldencyclopedia.org/entry/Carolus_Linnaeus)

REPORT

Jacob's Well and Ormeau Excursions – Report by *Lois Hughes*

Saturday the 7th November, 2015 held the promise of great weather for our planned meeting and excursions; perfect butterfly conditions, and we were not disappointed. We were pleased to welcome many familiar faces along with several other members seldom seen. Twenty in all, I believe, attended, some along with their children.

The Jacob's Well Environmental Education Centre is a delightful place in itself, inviting exploration of out-buildings or structures housing various creatures and set amongst a flourishing native garden. Ceramic tiles artfully depicting dragonflies, frogs and other native creatures adorned the gardens, with honeyeaters serenading as they feasted on flowering grevilleas. The composting toilets were fascinating!



Our packed meeting venue was light and airy with plenty of comfy seating. Following the meeting, we enjoyed refreshments in the adjoining kitchen area in preparation for our first excursion through the canefields. We are grateful to the farmer who has preserved, intact, the residual bushland beyond the canefields, through which he graciously gave us permission to explore.



Preserved bushland bordering canefield – Photos Steve Curle

We divided into small groups and started walking, initially, amongst various native grasses interspersed with Common Bracken Fern, small flowering shrubs, wild flowers and herbs as well as the prolific Swamp Sawsedge (*Gahnia clarkei*). The white flowered Riceflower (*Pimelia linifolia*), yellow flowered Hat Pins (*Xyris juncea*), the Rush Lily (*Tricoryne elatior*) and the Midyim Berry (*Austromyrtus dulcis*) were some of the common plants we encountered.



Riceflower (*Pimelia linifolia*)

Rush Lily (*Tricoryne elatior*)

Photos Graham McDonald

We were really intrigued by the innovative and creative method the Bonnet Orchid (*Cryptosylis erecta*) uses to ensure its maroon and green flowers are pollinated. It has chemicals that mimic those of the pheromone of a female native wasp, luring in the unsuspecting male, who, in attempting to “mate” with the flowers, pollinates them; clever designing indeed!





(*Persoonia virgata*) Photo Graham McDonald

delicate, fringed, white flowers of the Blueberry Ash (*Elaeocarpus reticulatus*) danced, like miniature ballerinas, in the sunlight.

This well-vegetated understory was overshadowed by many larger trees, shrubs and vines, including the majestic Wallum Banksias (*Banksia aemula*), their distinctive, cork-like, knobbly bark inviting touch. Intertwined amongst the Wallum Geebung (*Persoonia virgata*) with its attractive bright green upperside leaves, with maroon undersides and green immature fruits, trailed the Sarsparilla Vine (*Smilax glyciphylla*). Nearby, the



Swamp Sawsedge (*Gahnia clarkei*)



Bonnet Orchid (*Cryptosylis erecta*)

Photos Graham McDonald

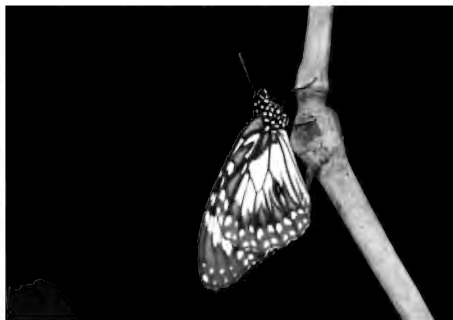
These were just some of the diverse range of interesting plants growing in this wallum heathland, through which we searched for the elusive Sword Grass Brown butterfly (*Tisiphone morrissi*). Although its host plant, the tall Swamp Sawsedge, was growing in abundance, there was no evidence of the butterfly on this occasion – possibly we were too early or too late for its flight period.



On a lighter note, secreted deep within the sharp leaves of a Gahnia plant, we found the larva of a Painted Skipper (*Hesperilla picta*). Annoyed at being disturbed, it crawled out of its hiding place, turned around and aimed a fecal pellet at a photographer invading its space, hitting him on the hand! #*! Apparently this butterfly is one fussy housekeeper who keeps its shelters free of frass in this manner, to deter potential predators who are attracted by the smell of frass!



Common Crow (*Euploea core*)



Swamp Tiger (*Danaus affinis*)



Evening Brown (*Melanitis leda*)



Australian Painted Lady (*Vanessa kershawi*)



Small Dusky Blue (*Candalides erinus*)
All photos this page Graham McDonald

Although we failed to sight the elusive Sword Grass Brown, we did see a number of other butterflies which are listed herewith: Large Grass Yellow (*Eurema hecabe*); Evening Brown (*Melanitis leda*); Australian Painted Lady (*Vanessa kershawi*); Common Crow (*Euploea core*); Swamp Tiger (*Danaus affinis*); Small Dusky Blue (*Candalides erinus*); Varied Dusky Blue (*Zizina otis* – formerly *Z. labradus*).

We all found this heathland a very interesting site and well worth another visit.





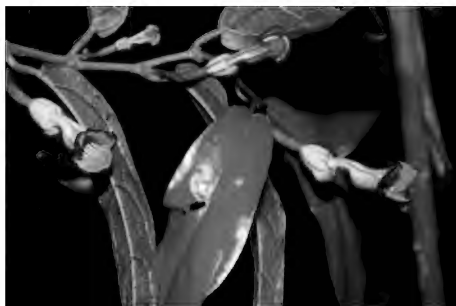
Upper Ormeau - Photo Glenn Leiper

Returning briefly to the Centre to reorganize, we then set out in convoy up into the thickly vegetated, mountainous rainforest site at Upper Ormeau. At this declared Council conservation area, an enormous Birdwing Butterfly Vine (*Pararistolochia praevenosa*) was forming a thick curtain of lush leaves, snaking all the way up into the rainforest canopy that clung to this steep site. Down below, an almost pristine rainforest creek trickled into the roadside gully.

Within minutes of our arrival we were entranced as a majestic male Richmond Birdwing (*Ornithoptera richmondia*) drifted lazily overhead. A large female arrived and after a short flight through the trees, settled on a branch just above our heads, wings outstretched, invitingly posing. Many cameras captured this rare moment! After her rest, she was soon joined by another female and together they moved



Birdwing female ovipositing



Pararistolochia praevenosa

Photos Glenn Leiner



1st instar larva of the Richmond Birdwing
(*Ornithoptera richmondia*)

Photo Graham McDonald

throughout the vines depositing many fresh eggs. A first instar caterpillar was discovered beneath a leaf amongst many egg casings, boding well for the next generations.

As we were standing on a narrow cleared track amidst the thick vegetation and having little or no nectar plants in the immediate vicinity to entice butterflies to linger here, mostly only Birdwings were seen, but fleetingly, as they crossed the clearing.



Those we did observe included a Large Grass Yellow (*Eurema hecabe*), a Caper White (*Belenois java*), a small white butterfly, possibly a Southern Pearl White (*Elodina angulipennis*), a Common Brown Ringlet (*Hypocysta meterius*), and a Common Grass Blue (*Zizina otis*).



Southern Pearl White (*Elodina angulipennis*)

Common Brown Ringlet (*Hypocysta meterius*)

Photos Graham McDonald

Two day flying moths were also observed. These were a Magpie Moth (*Nyctemera secundiana*) and a Cruria Moth (*Cruria synopla*).

To add to the excitement, a Bordered Rustic (*Cupha prosopis*) flashed his bright orange wings as he defended his territory from the vantage of a high perch. A male Orchard Swallowtail (*Papilio aegeus*) on patrol, was seen to pass through along with a Pale Triangle (*Graphium eurypylus*), a Blue Triangle (*Graphium choredon*) as well as a fleeting visit by a Four-barred Swordtail (*Protographium leosthenes*). It was both pleasing and interesting to note the presence of five Swallowtail butterfly species together at this location.

Two Orange Palm Darts (*Cephrènes augiades*) were seen perching on their local native host, the Bangalow Palms (*Archontophoenix cunninghamiana*). These were growing in abundance along the watercourse. As if to demand its presence be noted also, an orange Monarch (*Danaus plexippus*) joined the passing parade.

A cheeky, partly coloured juvenile male Variegated Wren (*Malurus lamberti*) entertained us as he investigated our intrusion with his intriguing antics. Meanwhile, a protective male hovered in the background, his glowing colours shining like jewels.

It was a breathtakingly beautiful spot, the towering tree-clad mountains high above and around us, the rippling creek below, the stillness of the bush broken only by birdsong and, of course, our excited chatter as these beautiful butterflies glided above and beside us, elusive and mysterious.

Storm clouds darkened the sky and thunder rumbled ominously as we headed home, tired but contented. A day well spent! A blessed day!



Our many thanks to Glenn Leiper who was the perfect host (his time and expertise were greatly appreciated).

Acknowledgements:-

Many thanks to all the other fellow excursion participants who supplied the information to enable me to more fully and accurately complete this report and who have offered photos as well. In particular, my thanks and appreciation must go to John Moss for his patient correction and helpful suggestions as we battled distractions and interruptions to complete the task. A great team effort from all involved! Thank you.

Ed. There is mention in this report of the elusive Sword Grass Brown butterfly (*Tisiphone morristi*). There is an article on this butterfly in issue #49 June 2008.

YOU ASKED



Stanley and Alisha would like to know what moth this is.

Peter says it is

Lasiocampidae; *Lasiocampinae*; *Entometa fervens* ♀ (Gum Snout Moth). The male and female are different. Check out Don's web page for more info.

<http://lepidoptera.butterflyhouse.com.au/lasi/fervens.html>



BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME

AGM – 9th April 2016, 10 am at Redlands Indigiscapes Centre, Capalaba –
See enclosed flyer.

*The Butterfly and Other Invertebrates Club Inc.
invites you to attend the launch of their latest
publication*

***The Mistletoes of Subtropical
Queensland, New South Wales and
Victoria***

*to take place
at 1 pm on Saturday 16th April, 2016
at the Queensland Herbarium,
Mount Coot-tha Road, Toowong QLD 4066*

RSVP to info@boic.org.au

Planning and General Meeting

What: Our planning meetings are informative and interesting. As well as planning our activities we share lots of information.
All members are welcome as this activity is also a general meeting of members.

When: **Saturday 7th May, 2016, from 10 am**

Where: You will be advised by email where the meeting will take place.

Indigi Day Out Saturday 4th June 2016 10 am to 4 pm. Discover the wonders of IndigiScapes at this fun-filled event! There will be wildlife displays, mini-workshops, music, arts and craft, kids' activities, and food to enjoy. BOIC will have a display at this event.



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The magazine seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The magazine is a platform for people, both amateur and professional, to express their views and observations about invertebrates. These are not necessarily those of the BOIC. The manuscripts are submitted for comment to entomologists or people working in the area of the topic being discussed. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

ACKNOWLEDGMENTS

Producing this magazine is done with the efforts of:

- Those members who have sent in letters and articles
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- John Moss, Martyn Robinson, Ross Kendall and Richard Zietek for scientific referencing and proof reading of various articles in this issue of the magazine

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Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible. **Membership fees are \$30.00 for individuals, schools and organizations.** If you wish to pay electronically, the following information will assist you: BSB: **484-799**, Account No: **001227191**, Account name: **BOIC**, Bank: **Suncorp**, Reference: your membership number and surname e.g. **234 Roberts**.

Butterfly and Other Invertebrates Club Inc.
PO Box 2113
RUNCORN Q. 4113

Next event – Annual General Meeting – 9th April, 2016, from 10 am

